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# Quality Engineering Test Report

**SERIES: DR-75      75W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE: A. DR-75-12   12V / 6.3A**  
**B. DR-75-24    24V / 3.2A**  
**C. DR-75-48    48V / 1.6A**

| NO | TEST ITEM                      | TEST CONDITION / SPECIFICATION                                                                          | RESULT                                                                                                                                                                                                | VERDICT |
|----|--------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1  | AC INPUT VOLTAGE RANGE         | I/P:TESTING      SPEC:85~264VAC<br>O/P:FULL LOAD                                                        | A : 65.812VAC~264VAC                                                                                                                                                                                  | P       |
| 2  | LINE REGULATION                | I/P:85~264VAC      SPEC: A: $\pm 0.5\%$<br>O/P:FULL LOAD      B: $\pm 0.5\%$<br>C: $\pm 0.5\%$          | A: -0.049% +0.00%<br>B: -0.049% +0.00%<br>C: +0.012% +0.012%                                                                                                                                          | P       |
| 3  | LOAD REGULATION                | I/P:230VAC      SPEC: A: $\pm 1\%$<br>O/P:MIN. TO FULL LOAD      B: $\pm 1\%$<br>C: $\pm 1\%$           | A: -0.148% +0.098%<br>B: -0.024% +0.00%<br>C: -0.09% +0.09%                                                                                                                                           | P       |
| 4  | OUTPUT VOLTAGE TOLERANCE       | I/P:85~264VAC      SPEC: A: $\pm 2\%$<br>O/P:MIN TO FULL LOAD      B: $\pm 1\%$<br>C: $\pm 1\%$         | A: -0.049% -0.255%<br>B: -0.024% +0.024%<br>C: +0.012% +0.2%                                                                                                                                          | P       |
| 5  | RIPPLE&NOISE                   | I/P:230VAC      SPEC: A: 100mV<br>O/P:FULL LOAD      B: 150mV<br>C: 240mV                               | A:5mV<br>B:8mV<br>C:49mV                                                                                                                                                                              | P       |
| 6  | AC INPUT CURRENT               | I/P:230VAC      SPEC: 1.2A<br>O/P:FULL LOAD                                                             | A :0.922A<br>B :0.81A<br>C :0.826 A                                                                                                                                                                   | P       |
| 7  | MAX. INRUSH CURREN             | I/P:230VAC      SPEC: 60A<br>O/P: FULL LOAD                                                             | A: 37.54A<br>B: 34A<br>C:33.289A                                                                                                                                                                      | P       |
| 8  | O/P VOLTAGE ADJ.RANGE          | I/P:230VAC      SPEC: A:12V~14V<br>O/P:MIN. LOAD      B: 24V~28V<br>C: 48V~53V                          | A:10.5V~14.9V<br>B:20.021V~29.123V<br>C:46.01V~60.03V                                                                                                                                                 | P       |
| 9  | SET UP TIME                    | I/P:230VAC      SPEC:1000mS<br>O/P:FULL LOAD                                                            | A: 596.7mS<br>B: 598mS<br>C: 613.6mS                                                                                                                                                                  | P       |
| 10 | HOLD UP TIME                   | I/P:230VAC      SPEC:50mS<br>O/P:FULL LOAD                                                              | A: 73.218mS<br>B: 78mS<br>C: 75.86mS                                                                                                                                                                  | P       |
| 11 | EFFICIENCY                     | I/P:230VAC      SPEC: A:76%<br>O/P:FULL LOAD      B:80%<br>C:81%                                        | A:77.39%<br>B:81.823%<br>C:83.006%                                                                                                                                                                    | P       |
| 12 | OVER LOAD PROTECTION           | O/P:TESTING      SPEC: 105%~150%                                                                        | A137%<br>B:131%<br>C:131%                                                                                                                                                                             | P       |
| 13 | GROUND LEAKAGE CURRENT         | I/P:240VAC      SPEC: L-FG-<1mA<br>N-FG-<1mA                                                            | A: L-FG:0.82mA<br>N-FG:0.81mA                                                                                                                                                                         | P       |
| 14 | INSULATION RESISTANCE          | SPEC: I/P-O/P: 500VDC/100M Ohms MIN.<br>I/P-FG : 500VDC/100M Ohms MIN.<br>O/P-FG: 500VDC/100M Ohms MIN. | A: O/P-FG >100M Ohms<br>I/P-O/P >100M Ohms<br>I/P-FG >100M Ohms<br>B: O/P-FG >100M Ohms<br>I/P-O/P >100M Ohms<br>I/P-FG >100M Ohms<br>C: O/P-FG >100M Ohms<br>I/P-O/P >100M Ohms<br>I/P-FG >100M Ohms | P       |
| 15 | DIELECTRIC / WITHSTAND VOLTAGE | SPEC: I/P- O/P: 3KVAC/ 1 min.<br>I/P - FG: 1.5KVAC/ 1 min.<br>O/P -FG: 0.5KVAC/ 1 min.                  | A: I/P-O/P :5.6mA<br>I/P-FG :3.8mA<br>O/P-FG :3.4mA<br>B: I/P-O/P :5.6mA<br>I/P-FG :3.8mA<br>O/P-FG :3.4mA<br>C: I/P-O/P :3.287mA<br>I/P-FG :2.68mA<br>O/P-FG :7.18mA                                 | P       |
| 16 | BURN-IN TEST                   | I/P: 230VAC      O/P: FULL LOAD<br>TA:26.8°C      BURN-IN DURATION : 2 hrs                              | A : NON BREAK                                                                                                                                                                                         | P       |

| NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TEST ITEM                                                               | TEST CONDITION / SPECIFICATION                                                                                                                                                                                                                                                                 | RESULT                                      | VERDICT |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------|----------|------|--------|--|-----|--------------|--------|--------|--|----|-----------------|--------|--------|--|----|-----------------------|--------|--------|--|-----|-----------|--------|--------|--|-----|----------------------|--------|--------|--|----|----------------------|--------|--------|--|-----|----------------------------|--------|--------|
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ENVIRONMENT TEST                                                        | 1.LOW TEMPERATURE TEST<br>I/P:230 VAC                      O/P:100% LOAD<br>AMBIENT TEMPERATURE:-9.9°C                                                                                                                                                                                         | A:<br>AFTER 14 hrs POWER ON OK              | P       |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                         | 2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST<br>I/P:230VAC                      O/P:FULL LOAD<br>AMBIENT TEMPERATURE:50.1°C                                                                                                                                                                       | A:<br>AFTER 3 hrs NON BREAK                 |         |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                         | 3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST<br>I/P:264VAC                      O/P:FULL LOAD<br>AMBIENT TEMPERATURE : 25°C<br>AMBIENT HUMIDITY : 95%                                                                                                                                              | A :<br>AFTER18 hrs POWER<br>ON/OFFNON BREAK |         |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
| 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TEMPERATURE RISE<br>TEST T rise OF PARTS                                | D: I/P :230VAC                      AFTER 2 hr BURN-IN<br>O/P :FULL LOAD                      TA:26.8°C                                                                                                                                                                                        |                                             | P       |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
| <table><tr><td></td><td>POSITION</td><td>P/N</td><td>TEMP</td><td>T rise</td></tr><tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>56.6°C</td><td>29.8°C</td></tr><tr><td></td><td>U1</td><td>MAIN TRANSISTOR</td><td>64.7°C</td><td>37.9°C</td></tr><tr><td></td><td>T1</td><td>MAIN TRANSFORMER WIRE</td><td>75.7°C</td><td>48.9°C</td></tr><tr><td></td><td>D20</td><td>O/P DIODE</td><td>78.9°C</td><td>52.1°C</td></tr><tr><td></td><td>C25</td><td>O/P FILTER CAPACITOR</td><td>74.8°C</td><td>48.0°C</td></tr><tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>54.8°C</td><td>28.0°C</td></tr><tr><td></td><td>LF1</td><td>LINE FILTER<br/>TRANSFORMER</td><td>61.0°C</td><td>34.2°C</td></tr></table> |                                                                         |                                                                                                                                                                                                                                                                                                | POSITION                                    |         | P/N      | TEMP | T rise |  | BD1 | BRIDGE DIODE | 56.6°C | 29.8°C |  | U1 | MAIN TRANSISTOR | 64.7°C | 37.9°C |  | T1 | MAIN TRANSFORMER WIRE | 75.7°C | 48.9°C |  | D20 | O/P DIODE | 78.9°C | 52.1°C |  | C25 | O/P FILTER CAPACITOR | 74.8°C | 48.0°C |  | C5 | I/P FILTER CAPACITOR | 54.8°C | 28.0°C |  | LF1 | LINE FILTER<br>TRANSFORMER | 61.0°C | 34.2°C |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | POSITION                                                                | P/N                                                                                                                                                                                                                                                                                            | TEMP                                        |         | T rise   |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | BD1                                                                     | BRIDGE DIODE                                                                                                                                                                                                                                                                                   | 56.6°C                                      |         | 29.8°C   |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | U1                                                                      | MAIN TRANSISTOR                                                                                                                                                                                                                                                                                | 64.7°C                                      |         | 37.9°C   |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | T1                                                                      | MAIN TRANSFORMER WIRE                                                                                                                                                                                                                                                                          | 75.7°C                                      |         | 48.9°C   |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | D20                                                                     | O/P DIODE                                                                                                                                                                                                                                                                                      | 78.9°C                                      |         | 52.1°C   |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | C25                                                                     | O/P FILTER CAPACITOR                                                                                                                                                                                                                                                                           | 74.8°C                                      |         | 48.0°C   |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | C5                                                                      | I/P FILTER CAPACITOR                                                                                                                                                                                                                                                                           | 54.8°C                                      | 28.0°C  |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | LF1                                                                     | LINE FILTER<br>TRANSFORMER                                                                                                                                                                                                                                                                     | 61.0°C                                      | 34.2°C  |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
| 19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | LIFE CYCLE                                                              | D: SUPPOSE C25 IS THE MOST CRITICAL COMPONENT<br>I/P:230VAC O/P:FULL LOAD Ta:25°C Tc25:74.8°C Life: 32615.3 hrs<br>I/P:230VAC O/P:FULL LOAD Ta:45°C Tc45:92.2°C Life:12279.5 hrs                                                                                                               |                                             | P       |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
| 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CRITICAL COMPONENT<br>RECORD<br>( FOR QC INSPECTION<br>REFERENCE ONLY ) | D: FUSE : 3AL/250V<br>BRIDGE DIODE : D3SB60 4A/800V<br>LINE FILTER : TF-484<br>TRANSFOMER : TF659<br>POWER SWITCHER : TOP-227<br>OUTPUT DIODE : BYQ-28X-200<br>OUTPUT CAPACITOR : 330uF/35V(v) 105°C ELNA LXJ<br>INPUT CAPACITOR : RUBYCON 100uF/400V 105°C<br>P.C.B : DR-75-R2 CEM-3 20 OZ SS |                                             |         |          |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
| DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SAMPLE                                                                  | TEST RESULT                                                                                                                                                                                                                                                                                    |                                             | TEST    | APPROVAL |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
| 20020304                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RD<br>SAMPLE<br>12V,24V,48V                                             | PASS                                                                                                                                                                                                                                                                                           |                                             | VINCENT | MAX.LIN  |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
| 20020531                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PRODUCT<br>SAMPLE<br>A202B01<br>12V,24V,48V                             | PASS                                                                                                                                                                                                                                                                                           |                                             | VINCENT | MAX.LIN  |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |
| 20020827                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PRODUCT<br>SAMPLE<br>A205D01<br>12V,24V                                 | PASS                                                                                                                                                                                                                                                                                           |                                             | VINCENT | MAX.LIN  |      |        |  |     |              |        |        |  |    |                 |        |        |  |    |                       |        |        |  |     |           |        |        |  |     |                      |        |        |  |    |                      |        |        |  |     |                            |        |        |

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